ATTACHMENT C

Clean Replacement/New Claims (entire set of pending claims)

Following herewith is a clean copy of the entire set of pending claims.

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10. (NEW) A method for measuring a thickness of a layer, said layer to be measured being deposited on an underlying layer and being part of an integrated circuit,

said method being carried out, in real time, through an engraving reaction during advance of an engraving front relative to at least a portion of said integrated circuit,

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said engraving reaction being applied to said underlying layer so as to generate a light emission having at least one spectral component,

said method comprising the steps of:

a) measuring an amplitude of light emitted during the engraving reaction, in a selected spectral range comprising said at least one spectral component:

b) establishing a distribution of said amplitude as a function of time;

c) determining, from said distribution, a transition of said amplitude as said engraving front passes from said layer to be measured to said underlying layer;

d) and computing the thickness of said layer to be measured, based on said distribution and said transition, by correlating said transition to said distribution.

11. (NEW) The method of claim 10, wherein said spectral component of said underlying layer is a perceptible emission wavelength characteristic of said underlying layer.

12. (NEW) The method of claim 10, wherein said layer to be measured comprises a second layer of silicon oxide and the underlying layer comprises a barrier layer of silicon nitride, and wherein said at least one spectral component of said light emission generated when said engraving reaction is applied to said underlying layer comprises a spectral line at 405 nm.

13. (NEW) The method of claim 10, wherein said correlation of said distribution to said transition is proportional to an engraving time period measured between a

beginning point of the engraving reaction at which said amplitude constitutes a reference amplitude, and a further point in time corresponding to an increase of 50% in said reference amplitude in said distribution.

14. (NEW) The method of claim 13, wherein said thickness of said layer to be measured is calculated on the basis of a linear combination linking said engraving time and the computed thickness of the layer to be measured.

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15. (NEW) The method of claim 10, wherein the step comprising measuring the amplitude of the light emitted is performed by means of a monochromator.

16. (NEW) A device for measuring a thickness of a layer, said layer to be measured being deposited on an underlying layer and being part of an integrated circuit,

the measuring of the thickness of said layer to be measured being carried out, in real time, through an engraving reaction during advance of an engraving front relative to at least a portion of said integrated circuit, and

said engraving reaction being applied to said underlying layer so as to generate a light emission having at least one spectral component,

said device comprising:

first means for measuring an amplitude of light emitted during the engraving reaction, in a selected spectral range comprising said at least one spectral component;

and second means for:

establishing a distribution of said amplitude as a function of time;

determining, from said distribution, a transition of the amplitude as said engraving front passes from said layer to be measured to said underlying layer; and

computing the thickness of said layer to be measured, on the basis of said distribution and said transition, by correlating said transition to said distribution.

17. (NEW) The device of claim 16, further comprising:

a reactor for engraving said integrated circuit, said reactor being fitted with an optical window enabling the engraving reaction to be optically observed;

a monochromator having an operational wavelength centered on a characteristic value of said underlying layer for enabling amplitude values of the emitted light to be measured; and

means for determining a time taken for the engraving front produced within said reactor to reach the underlying layer and for computing an effective thickness of said layer to be measured by a linear combination linking said effective thickness to the time taken by said engraving front to reach said underlying layer.